

SPLASH 2004: NOAA Ship McArthur Weekly Science Report

26 August 2004

Jay Barlow, Cruise Leader

SCIENCE SUMMARY: Thursday, 19 August to Wednesday, 25 August 2004

The big items in news of this week are the three western blue whales that we found. What could be bigger? The first sighting was last Thursday and was near the far western edge of our study area, just outside of Russian waters. On that day we got photos, biopsies, and acoustic recordings from sonobuoys (the latter of which verified that the whale spoke with western accent). The second sighting was approximately 80 miles SSE of Tanaga Is., in the center of the Aleutian Island chain. Blue whales in the North Pacific are divided into eastern and western stocks based on their acoustic call types, and Kate Stafford (aboard for Leg 2 of SPLASH) has done much of the research that led to these acoustically defined stocks. Western blues base their existence on the premise that it is better to be heard than to be seen. Blue whale calls travel underwater for tens to hundreds of miles, and they have been heard frequently on the Navy's SOSUS array of spy hydrophones that were tuned to listen for Soviet submarines during the Cold War era. Now these hydrophones are being used to listen for western blue whales. Despite the high frequency at which their low-frequency calls are heard, there has not been a documented sighting of western blue whales in US waters for many decades.

Needless to say, we were all very excited to see these western blue whales, perhaps no one more than Kate, who has spent much of her last ten years trying to convince people that they really exist. But amazing sights last Thursday did not end with the blue whale. Late that afternoon, we encountered several very energetic killer whales. As we approached, it was obvious that they were chasing several Dall's porpoises. As time passed, the orcas narrowed their menu choice to one unfortunate porpoise. The three killers continued to pursue, harass, and tail-slap that porpoise until it could hardly move. Finally, the whales dove together, and the porpoise never surfaced again. The porpoise was apparently consumed underwater, leaving no sign at the surface that it ever existed.

Weather began to deteriorate after the first blue whale sighting, and we even lost an entire day due to sustained 30-knot winds. We spent that night anchored in the lee of Kiska Is., the historic location of the only Japanese occupation of US territory during World War II. This really bad day was followed by several days of Beaufort 5 conditions and then was followed by several days of Beaufort 4. Despite the less than perfect conditions, we did begin to find some humpbacks (remember them? the purpose of our trip?). We managed to obtain 12 fluke IDs and 10 biopsies this week, making gravy out of very thin soup.

At this point, we are working on the south side of Unalaska Island, preparing for our next port call in beautiful Dutch Harbor. Our thoughts turn, naturally, to reflect on

the natural wonders we have encountered on Leg 2 and to reflect on our desperate need for more espresso beans!!!!

CATALOG NEWS:

The SWFSC photographic catalog of humpback whale flukes has now grown to 321 distinct individuals, and that is just from Leg 1. Our estimate of the number of total flukes from both Legs 1 & 2 has now reached 490.

This week Liz Zele found two more matches between 'our' whales and whales in existing photo-ID catalogs. Both of our whales were from the Southeast Alaska area and both matched to the Southeast Alaska Catalog.

SWFC-MFR-20040710-E-0186 matches SEAK SS-03-15(05)
SWFC-JPB-20040707-C-0109 matches SEAK 1510

Sightings and Effort Summary for Marine Mammals

Date	Start/Stop Time	Position	Total Distance	Avg. Beaufort
081904	0742	N52:35.42 E169:13.69	58.9 nmi	1.4
	2108	N52:13.43 E169:41.60		
082004	0741	N52:19.46 E171:31.05	93.3 nmi	4.2
	2054	N51:16.47 E173:38.66		
082104		no effort- weather day		
082204	0716	N51:45.59 E177:29.42	69.3 nmi	4.6
	2106	N50:19.29 E178:34.02		
082304	0719	N50:30.40 E179:23.65	79.4 nmi	5.5
	2053	N50:36.16 W178:25.99		
082404	0705	N50:38.15 W176:41.78	90.6 nmi	4.8
	2037	N50:48.66 W174:04.01		
082504	0740	N50:53.42 W172:51.57	97.9 nmi	4.0
	2115	N51:53.70 W171:00.38		

CODE	SPECIES	TOT#
037	Orcinus orca	5
046	Physeter macrocephalus	5
049	ziphiid whale	1
051	Mesoplodon sp.	1
074	Balaenoptera physalus	4
075	Balaenoptera musculus	2
076	Megaptera novaeangliae	7
078	unid. small whale	2
079	unid. large whale	1
096	unid. cetacean	1

TOTAL 29

note: Dall's & harbor porpoises and pinnipeds are not included.

Biopsies (Juan Carlos Salinas)

Species	Weekly	Cumulative
Humpback whale	10	277
Fin whale	0	29
Blue whale	1	4
Sperm whale	0	6
Killer whale	3	28
Baird's beaked whale	0	3
Dall's porpoise	0	1
Cuvier's beaked whale*	0	1

*dead when sampled

Photo-Project (Holly Fearnbach)

Species	Weekly #	Cumulative #
Humpback whale		
Catalog-quality flukes	12	490
Fin whale dorsal IDs	3	47
Sperm whale fluke IDs	1	13
Blue whale dorsal IDs	2	5
Minke whale dorsal IDs	0	1
Killer whale dorsal IDs	12	137
Baird's beaked whales	0	15
Northern right whale dolphins*	0	1
Pacific white-sided dolphins*	0	3
Cuvier's beaked whale (dead)	0	1
Steller sea lion	0	1

*number of groups photographed

Oceanographic Operations (Lillian Stuart)

Date	Number CTDs
8/19	1
8/20	1
8/21	1
8/22	1
8/23	1
8/24	1
8/25	1

Acoustics Squeakly Report (Shannon Rankin)

Acoustics has finally earned its keep with a series of sonobuoys deployed at in the southwestern corner of the cruise tracklines. While AR1 obtained biopsies and photos, Kate and Liz obtained several calls attributed to the western stock of blue whales. Morning sonobuoys have shown the presence of these blue whales throughout the offshore western Aleutians. The array has been working full time, with too many sperm whales to count (ok, Jay, I still promise to count them!), and a pleasant change are the vocal killer whales. Kate even admits that sometimes the squeaky critters are kinda cool. And for the geologists, an earthquake was heard dark and early one sonobuoy morning (as visions of tsunamis danced through our heads).

Poetry Corner (discontinued due to Poet's strike)